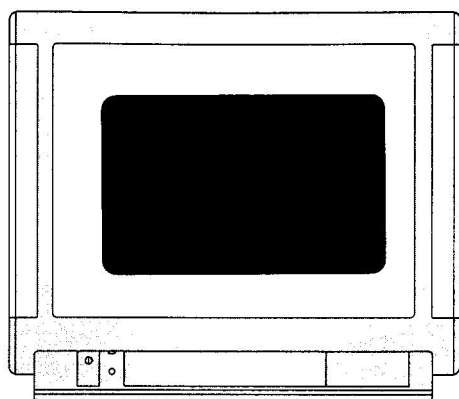




Colour TV

Models

CT-25AV1BD	CT-28AV1BD
CT-25AV1BDS	CT-28AV1BDS
CT-25AV1LD	CT-28AV1LD

SPECIFICATIONS

Reception System	CCIR-I PAL		
Reception Frequency	UHF 470MHz~862MHz	(all models)	
	VHF 47~170MHz (VB1), 170~448MHz (VB2)		(LD models only)
Mains Input.....	AC 230V 50Hz		
Power Consumption	110W	(25AV1BD/LD)	
	128W	(25AV1BDS)	
	112W	(28AV1BD/LD)	
	130W	(28AV1BDS)	
Aerial Input	75 ohm		
Intermediate Frequency	Video:	39.5MHz	
	Sound:	33.5MHz	
Audio Output	2 x 12W (L/R) + 12W (Centre) + 2 x 6W (Rear)		(25AV1 models)
(music power)	2 x 12W (L/R) + 15W (Woofer) + 12W (Centre) + 2 x 6W (Rear)		(28AV1 models)
Speakers	2 x (10cm + 4cm) (L/R) + 12x8cm (Centre) + 2 x 10cm (Rear)		(25AV1 models)
	2 x (10cm + 4cm) (L/R) + 10cm (Woofer) + 12x8cm (Centre)		
	+ 2 x 10cm (Rear)		(28AV1 models)
Chassis	EE3		
Picture Tube	A59EAK71X11	59cm(V)/25", 110°	(25AV1 models)
	A66EGW83X101	66cm(V)/28", 110°	(28AV1 models)
Cabinet dimensions.....	604mm x 473mm x 500mm		(25AV1 models)
(approx. W x D x H)	671mm x 495mm x 548mm		(28AV1 models)
Weight	28Kg	(25AV1 models)	
(approx. Not incl. stand	34Kg	(28AV1 models)	
or rear speakers)			

MITSUBISHI ELECTRIC CORPORATION

Copyright © 1995 Mitsubishi Electric UK Ltd



1 GENERAL NOTES

1.1 SAFETY PRECAUTIONS

1.1.1 General Warnings

1. Observe any cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.
2. An isolation transformer should be used between the television receiver and the AC power supply point before any test or servicing is performed on a LIVE chassis television receiver.
3. Operation of these receivers outside the cabinet or with the back cover removed involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment.
4. Do not install, remove or handle the picture tube in way unless shatterproof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
5. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

1.1.2 X-RAY Warning

Under fault conditions the CRT can generate X-rays. The use of a lead apron is recommended if available.

When replacing the CRT only use the designated replacement part as it is a critical component with regard to X-rays. No high-voltage adjustments are provided.

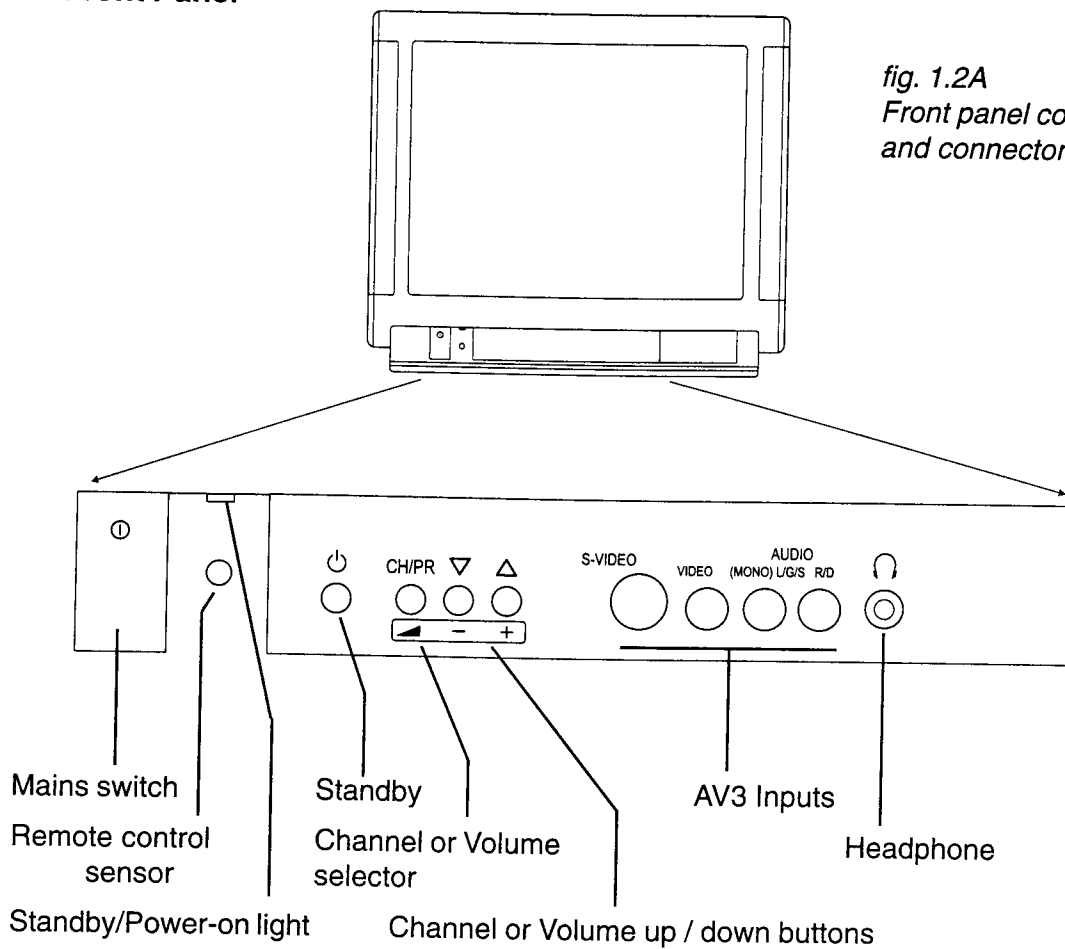
1.1.3 Leakage Current Check

Before returning the receiver to the customer it is recommended that the leakage current be measured according to the following method:

With the AC plug removed from the AC source, place a jumper across the live and neutral pins. Turn the receiver AC switch on. Using an OHMMETER, connect one lead to the shorted AC plug and touch the other lead to each exposed metal part (antennas, screw heads, etc.) in turn, particularly any exposed metal part having a return path to the chassis. Any resistance below a value of 1 MEG OHM indicates an abnormality which requires corrective action.

1.2 CONTROLS AND CONNECTORS

1.2.1 Front Panel



1.2.2 Rear Panel Connectors

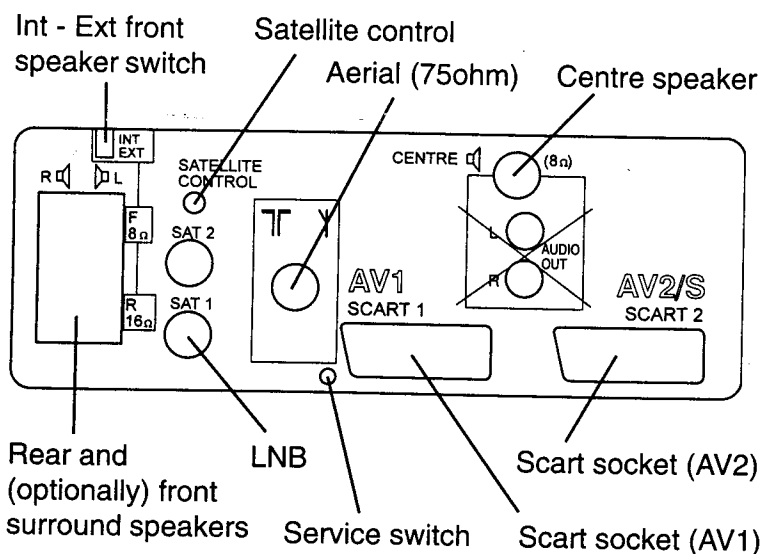


fig. 1.2B Rear panel connectors

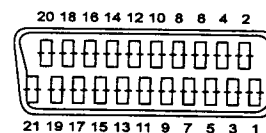


fig. 1.2C Scart socket pin details

Pin	AV1	AV2
1	Audio out - R	Audio out - R
2	Audio in - R	Audio in - R
3	Audio out - L	Audio out - L
4	Audio earth	Audio earth
5	Blue earth	Earth
6	Audio in - L	Audio in - L
7	Blue in	Not connected
8	Function switch	Function switch
9	Green earth	Earth
10	Not connected	Not connected
11	Green in	Not connected
12	Not connected	Not connected
13	Red earth	Chroma earth
14	Blanking earth	Earth
15	Red in	Chroma in
16	RGB blanking	Not connected
17	Video out earth	Video out earth
18	Video in earth	Y earth
19	Video out	Video out
20	Video in	Y in
21	Socket earth	Socket earth

1.3 REQUIRED EQUIPMENT

1.3.1 Measuring equipment

- Oscilloscope
- Signal generator
- DC milliammeter
- DC voltmeter

1.3.2 Test signals

- PAL Crosshatch
- PAL Monoscope (or a VCR playing a monoscope alignment tape)
- PAL Colour-bar with the specification as in figure 1.3A below:

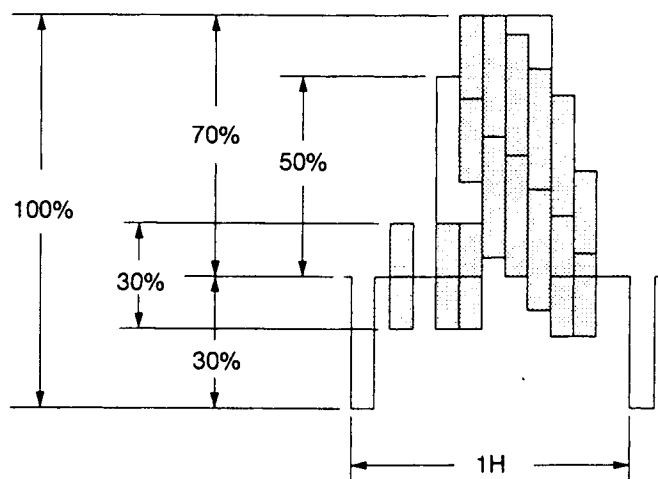


fig. 1.3A Split-field colour bars (with 100% window)

1.4 CONNECTING LEADS

1.4.1 Identification

Connecting leads are identified by the colours of their wires according to figure 1.4A below:

Colour	Code
BLACK	A
BROWN	B
RED	C
ORANGE	D
YELLOW	E
GREEN	not used (earth)
BLUE	G
VIOLET	H
GREY	J
WHITE	K
PINK	L

Example:

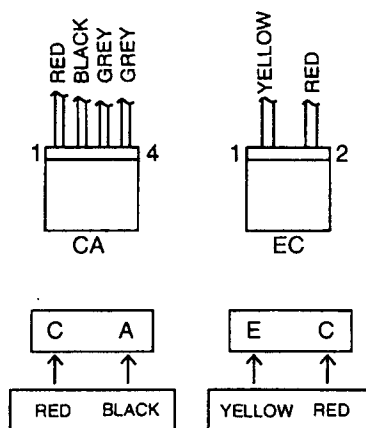


fig. 1.4A Connecting lead identification chart

1.4.2 Lead dressing

Leads must be dressed as shown in table 1.4B and the diagram (fig. 1.4C) below. The leads are routed or clamped so that they do not come close to any heat generating or high-tension parts.

The anode lead wire is routed such that no tension is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

CLAMP	25/28 AV1 BD/LD	25/28 AV1 BDS
1	KB, KK	KB, KK
2	DA, DE, HJ	DA, DE, HJ
3	HH, HJ	HH, HJ
4	DD, DE, DS	DD, DE, DS
5	DD	CA, DD, DG, GB
6	GA, GB, KD, DA (loop wires 1 + 2)	GA, GB, KD, DA (loop wires 1 + 2)
7	DY	DY
8	LB, SA (25AV1 only), BA (looped)	LB, SA (25AV1 only), BA (looped)
9	GA, GB, KD	GA, GB, KD
10	LB (looped), SB, Focus	LB (looped), SB, Focus
11	Anode lead	Anode lead
12	BA, DA (wires 1 + 2 only)	BA, DA (wires 1 + 2 only)

table 1.4B Lead-dressing table.

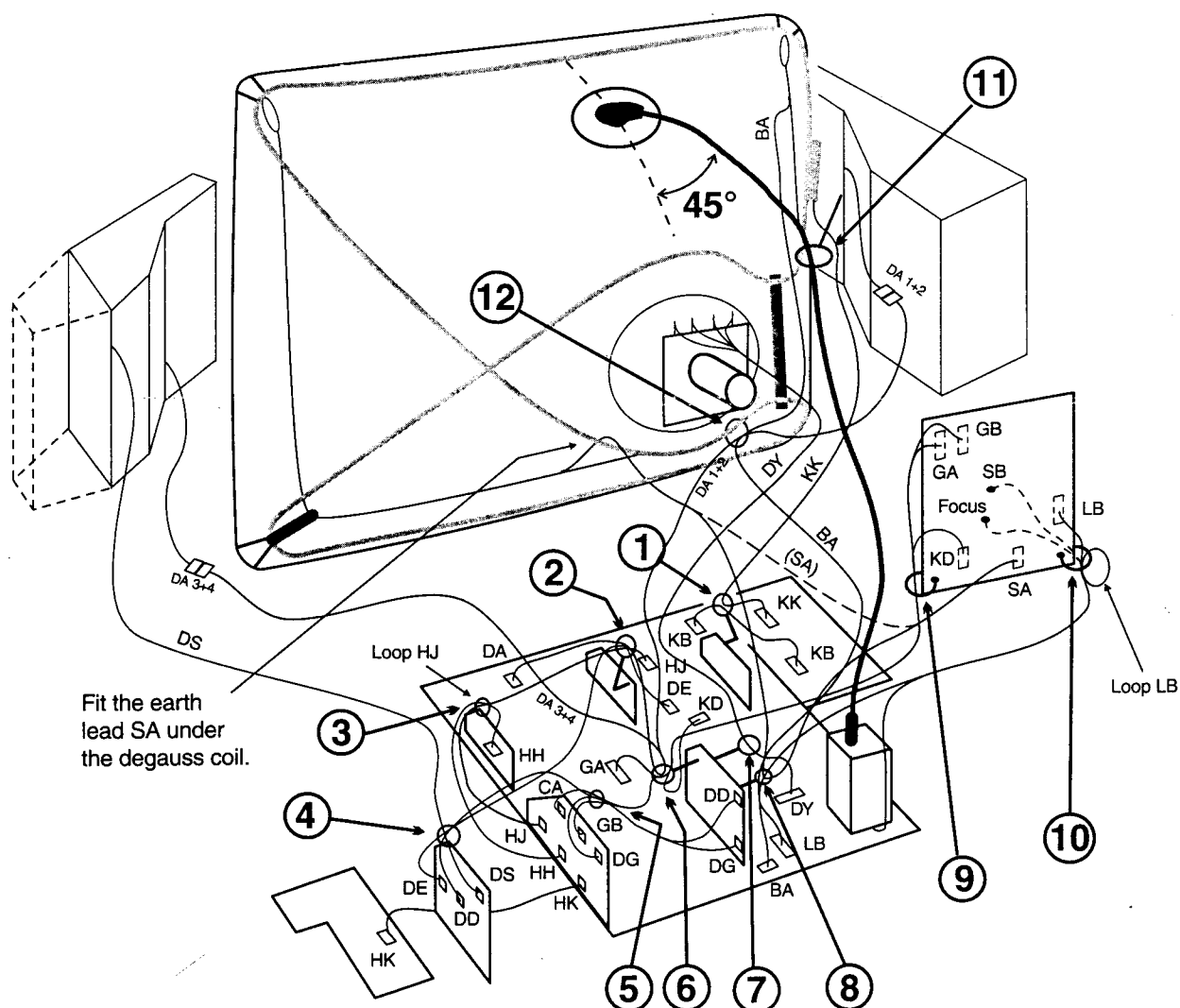


fig. 1.4C Lead-dressing diagram.

2 SERVICE ADJUSTMENT PROCEDURES

2.1 INTRODUCTION

Most service adjustments to these models are made using the remote control (figure 2.1A) with the TV in service mode. The adjustment data is stored in an EEPROM.

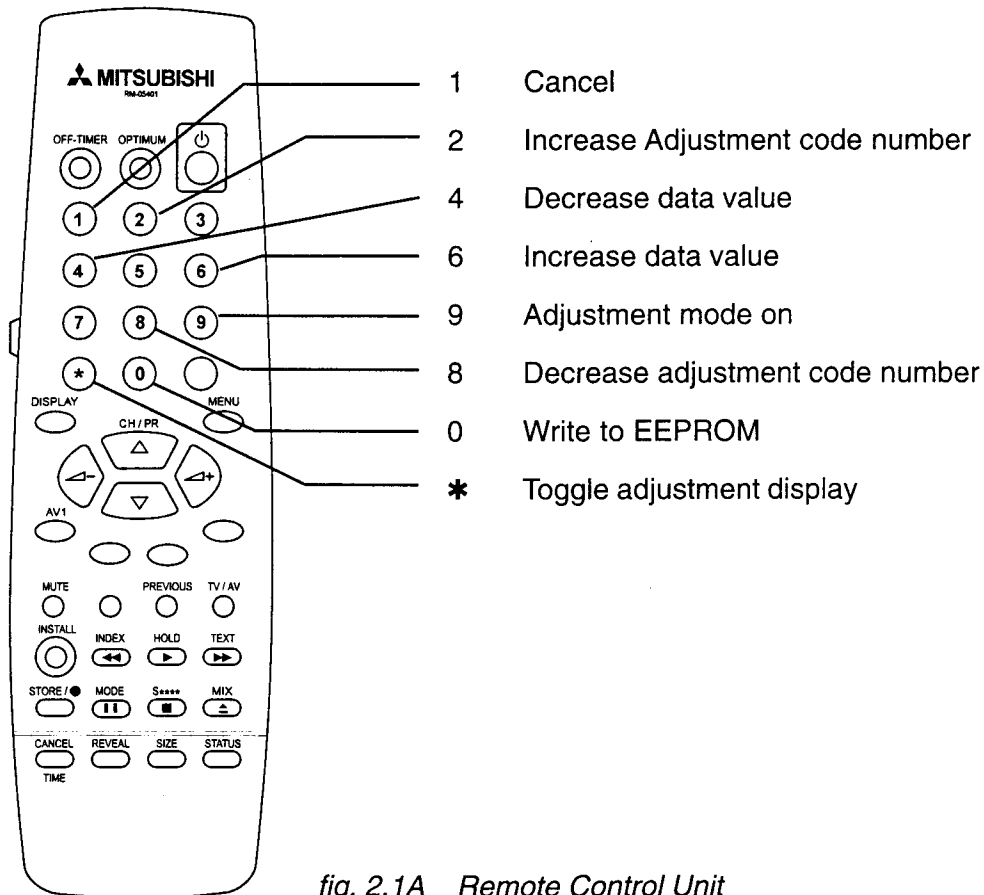


fig. 2.1A Remote Control Unit

2.1.1 Basic adjustment procedure

1. Turn the power on. With a small screwdriver, press the Service switch (S701, next to the aerial socket) and then button "9" within 5 seconds to enter service mode.
2. Press the "*" button to select either the VCJ or OPTION adjustment display (figs. 2.1B and C).

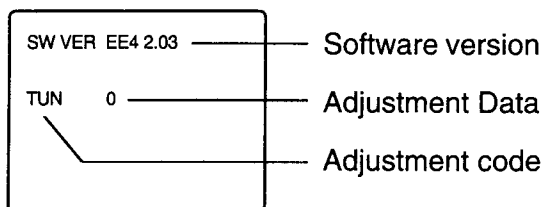


fig. 2.1B Options adjustment display

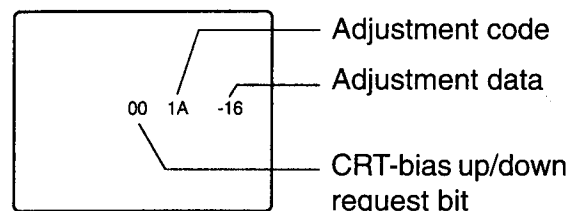


fig. 2.1C VCJ adjustment display

3. Press buttons "2" or "8" to increase or decrease the adjustment code number.
4. Press buttons "6" or "4" to increase or decrease the data value.
5. After completing your adjustments, press button "0" to write the adjustment data to the EEPROM.

To cancel a change, press button "1" (or the Standby button) before writing the adjustment to the EEPROM. All data adjusted since the last EEPROM write will be reset.

2.2 INITIALISING THE EEPROM

If you have replaced the EEPROM (IC702) or if for any reason the adjustment data has become corrupted it will be necessary to initialise the EEPROM.

2.2.1 Initialising the EEPROM

1. If necessary, switch off by the Main switch.
2. Hold in the service switch (S701, next to the aerial socket) while switching on by the Main switch.
3. Release the service switch after 3 seconds.
4. Switch off by the Main switch.
The EEPROM data values have now all been reset to their initial default values as shown in table 2.2C.
5. Switch on by the Main switch. Press the Service switch and then button "9" within 5 seconds to enter service mode.
6. Press the "*" button to select the OPTIONS adjustment display.
7. Press buttons "2" or "8" on the remote control to select the adjustment code.
8. Adjust the data value for each code using buttons "2" or "4" on the remote control according to table 2.2A below:

(Other adjustment codes will be displayed but need not be changed on these models.)

CODE:	TUN	SAT	AUD	ATS	STD	SYS	AVI	SPK	ABG	AI	AL	ADK	MNP	FFT	VOL	HYP	SCP	FMP
25/28AV1BD	0	0	10	1	1	2	2	0	02	02	00	15	70	1	74	1	20	23
25/28AV1BDS	0	1	10	1	1	2	2	0	02	02	00	15	70	1	74	1	20	23
25/28AV1LD	1	0	10	1	1	2	2	0	02	02	00	15	70	1	74	1	20	23

table 2.2A Data values for the OPTIONS adjustments.

9. Press the "0" button to write the changes to the EEPROM.
10. Press the "*" button to select the VCJ adjustment display.
11. Press buttons "2" or "8" on the remote control to select the adjustment code.
12. Adjust the data value of each code using buttons "2" or "4" on the remote control according to table 2.2B below:

(Other adjustment codes will be displayed but need not be changed on these models.)

CODE:	07	11	12	19	1B	1C
25AV1BD/BDS/LD	-7	001	111	-3	-11	-2
28AV1BD/BDS/LD	-7	001	111	-2	-9	-3

table 2.2B Data values for the VCJ adjustments.

13. Press the "0" button to write the changes to the EEPROM.

2.2.2 EEPROM Default data values.

These values are adequate to allow the set to be adjusted.

VCJ data values			OPTIONS data values		
CODE	FUNCTION	DATA VALUE	ITEM	DESCRIPTION	DATA VALUE
00	V-AMP	-16	TUN	TUNER TYPE	0
01	V-CORRECT	-31	SAT	SATELLITE ENABLE	0
02	P-AMP	+05	AUD	AUDIO SYSTEM	00
03	TILT	-12	ATS	AUTO TUNING SORT	0
04	V-LIN	+23	STD	RECEPTION STANDARD	0
05	C-CORRECT	-09	SYS	COLOUR SYSTEM	0
06	H-AMP	-22	AVI	NO. OF AV INPUTS	0
07	16x9 - SW.RGB-MATRIX	-07	AVD	AV DUBBING	-
08	V-SHIFT	+02	EEX	CHASSIS TYPE	-
09	H-PHASE	+10	SPK	SPEAKER SW ENABLED	1
0A	B-DRIVE	+01	EEP	EEPROM SIZE	-
0B	G-DRIVE	+01	ABG	AGC GAIN - BG	10
0C	R-DRIVE	+01	AI	AGC GAIN - I	10
0D	CONTRAST	+14	AL	AGC GAIN - L	10
0E	BRIGHT	+01	ADK	AGC GAIN - DK	10
0F	COLOUR-SAT	+10	MNP	NICAM PRESCALE	70
10	NTSC-TINT	00	TXT	TELETEXT TYPE	-
11	SHARP	111	FFT	FAST / TOP TEXT	0
12	PAL-LUMA-DELAY	111	VOL	VOLUME PRESCALE	70
13	SECAM-LUMA-DELAY	111	HYP	HYPERSOUND	0
14	V-AMP-60	00	SCP	SCART PRESCALE	1B
15	P-AMP	00	FMP	FM PRESCALE	23
16	H-AMP-60	00			
17	V-SHIFT-60	00			
18	H-PHASE-60	00			
19	H-PHASE-TEXT	00			
1A	H-PHASE-SECAM	00			
1B	H-PHASE-RGB	00			
1C	P-AMP-16:9	00			
1D	358NTSC-LUMA-DELAY	111			
1E	443NTSC-LUMA-DELAY	111			

table 2.2C EEPROM Default data values.

2.3 VIF CIRCUITS

2.3.1 RF-AGC

VR101 (adjacent to the tuner)

1. Connect an RF signal such as an off-air broadcast.
2. Check the AFT is on for the current channel.
3. Adjust VR101 so that the picture and sound exhibit no noise, beat or intermodulation distortion.

2.4 DEFLECTION CIRCUITS

2.4.1 Important notes

Before making any adjustments, if you have changed the CRT, FLYBACK TRANSFORMER or made any changes in the deflection circuits; adjust the CRT bias as described in 2.6.1 steps 1 ~ 6 (*Video Circuits – Screen control*).

Check the VERTICAL BREATHING CORRECTION as follows:

1. Select the VCJ adjustment display.
2. Set the adjustment code to "01" with buttons "2" or "8" on the remote control.
3. If necessary, adjust the data value to "-31" using buttons "4" or "6" on the remote control.

2.4.2 Horizontal centre

Code 09 (H-PHASE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "09" with buttons "2" or "8" on the remote control.
4. Adjust the horizontal position with buttons "4" or "6" on the remote control.

2.4.3 Horizontal width

Code 06 (H-AMP)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "06" with buttons "2" or "8" on the remote control.
4. Adjust horizontal width with the buttons "4" or "6" on the remote control.

2.4.4 East-West PCC

Code 05 (CORNER CORRECTION)

Code 03 (PARABOLA TILT)

Code 02 (PARABOLA AMP)

1. Connect an RF PAL Crosshatch signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "05" with buttons "2" or "8" on the remote control.
4. Adjust the data value to "-25" with buttons "4" or "6" on the remote control.
5. Set the adjustment code to "03" with buttons "2" or "8" on the remote control.

6. Watching the second vertical line in from both sides of the screen (figure 2.4A), make any upper and lower distortion symmetrical using buttons "4" or "6" on the remote control.
7. Set the adjustment code to "02" with buttons "2" or "8" on the remote control.
8. Adjust the straightness of both vertical lines (figure 2.4B) using buttons "4" or "6" on the remote control.
9. Repeat steps 1 to 8 above if necessary.
10. Connect a VCR and play a PAL-Monoscope alignment tape.
11. Make sure the horizontal width and horizontal centre are correct. If necessary readjust Horizontal Centre ("09") and Horizontal Width ("06") again.

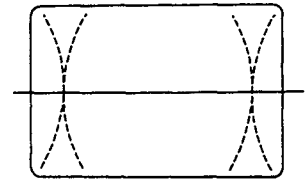


fig. 2.4A

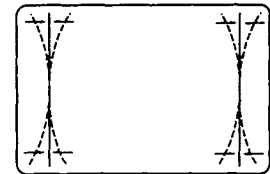


fig. 2.4B

2.4.5 Height and linearity

Code 00 (V-AMP)

Code 04 (V-LIN)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "00" (V-AMP) with buttons "2" or "8" on the remote control.
4. Adjust the circle to a true circle with buttons "4" or "6" on the remote control.
5. Set the adjustment code to "04" (V-LIN) with buttons "2" or "8" on the remote control.
6. Adjust the linearity to be the same for the top and bottom halves of the circle using buttons "4" or "6" on the remote control.
7. Set the adjustment code to "00" (V-AMP) with buttons "2" or "8" on the remote control.
8. Readjust V-AMP with buttons "4" or "6".
9. Repeat the steps above, if necessary.

2.4.6 Vertical centre

Code 08 (V-SHIFT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "08" (V-SHIFT) with buttons "2" or "8" on the remote control.
4. Adjust the centre line of picture to be within ± 3 mm from the vertical centre on the screen using buttons "4" or "6" on the remote control.

2.4.7 60Hz Deflection circuit offsets

Code 14 (V-AMP 60)

Code 15 (P-AMP 60)

Code 16 (H-AMP 60)

Code 17 (V-SHIFT 60)

Code 18 (H-PHASE 60)

1. Connect an RF 60Hz Crosshatch signal.
2. Select the VCJ adjustment display.

3. Select each adjustment code in turn with buttons "2" or "8" on the remote control and adjust each item to the figures shown in table 2.4C below using buttons "4" or "6" on the remote control.

CODE:	14	15	16	17	18
25AV1BD/BDS/LD	+8	+1	-2	+14	-4
28AV1BD/BDS/LD	+7	+2	-2	+8	-5

table 2.4C 60Hz adjustment offsets

2.5 CRT CIRCUITS

2.5.1 White balance

Code 0A (B-DRIVE)

Code 0B (G-DRIVE)

Code 0C (R-DRIVE)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Select the VCJ adjustment display.
3. Set the adjustment codes to "0A", "0B" and "0C" in turn and pre-adjust each to "0".
4. Adjust codes "0A" and "0C" to adjust the white balance.

2.5.2 Focus

FOCUS control on the Flyback Transformer

1. Connect an RF signal such as an off-air broadcast.
2. Adjust the FOCUS control for the best overall focus.

2.6 VIDEO CIRCUITS

Perform the following adjustments after adjusting the Deflection circuits. Allow the TV to warm up for 20 minutes before proceeding

2.6.1 Brightness and Contrast

SCREEN control on the Flyback Transformer

Code 0F (COLOUR SATURATION)

Code 0E (BRIGHTNESS)

Code 0D (CONTRAST)

BEAM CURRENT (using connector TP adjacent to the Flyback Transformer)

1. Connect an RF Crosshatch signal.
2. Select the VCJ adjustment display.
3. Make sure that the Screen Up/Down Request Bit is set to "00". If not, adjust the SCREEN control on the Flyback Transformer.
4. Change the external signal to a Colour-bar.
5. Readjust the SCREEN control to give "00".
6. Repeat steps 1 to 5 until the Screen Up/Down Request Bit is "00" for both signals.
7. Connect an RF Colour-bar signal.
8. Set the adjustment code to "0F" with buttons "2" or "8" on the remote control.
9. Adjust the data value to "-32" with buttons "4" or "6" on the remote control.

10. Set the adjustment code to "0E" with buttons "2" or "8" on the remote control.
11. Adjust using buttons "4" or "6" so that a slight difference in brightness can be seen between blue and black areas.
12. Set the adjustment code to "0D" with the buttons "2" or "8" on the remote control.
13. Connect a DC ammeter's "+" lead to connector TP pin 1 on the MAIN-PCB and the "-" lead to connector TP pin 2.
14. Adjust the beam current using buttons "4" or "6" on the remote control to $1300 \pm 20 \mu\text{A}$ for 28AV1BD / BDS / LD or $1000 \pm 20 \mu\text{A}$ for 25AV1BD / BDS / LD.
15. Check, and if necessary, readjust the BRIGHTNESS, code "0E".
16. Check that the Screen Up/Down Request Bit is "00". If not, repeat steps 1 to 13 above.
17. Now proceed to the Colour Output adjustment.

2.6.2 Colour output

Make this adjustment only after adjusting the White Balance, Brightness and Contrast.

Code 0F (COLOUR SATURATION)

1. Connect an RF Colour-bar signal.
2. Select the VCJ adjustment display.
3. Set the adjustment code to "0F" with buttons "2" or "8" on the remote control.
4. Connect an oscilloscope to the junction of R673 and IC660 Pin 9 (BLUE-OUT) on the CRT PCB).
5. Make adjustments using buttons "4" or "6" on the remote control until the waveform is as shown in figure 2.6A.
6. Increase the resulting data value by five steps.

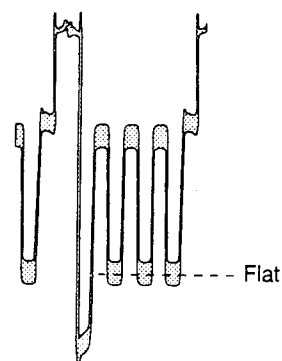


fig. 2.6A

2.7 POWER CIRCUIT

2.7.1 B4 Voltage

VR951 (on main PCB next to the SMT)

1. Connect a VCR and play a PAL-Monoscope alignment tape.
2. Push the OPTIMUM button on the remote control.
3. Connect a DC voltmeter's "+" lead to TP91 on the MAIN PCB and the "-" lead to GROUND.
4. Adjust VR951 so that the voltage is $145 \pm 2\text{V}$.

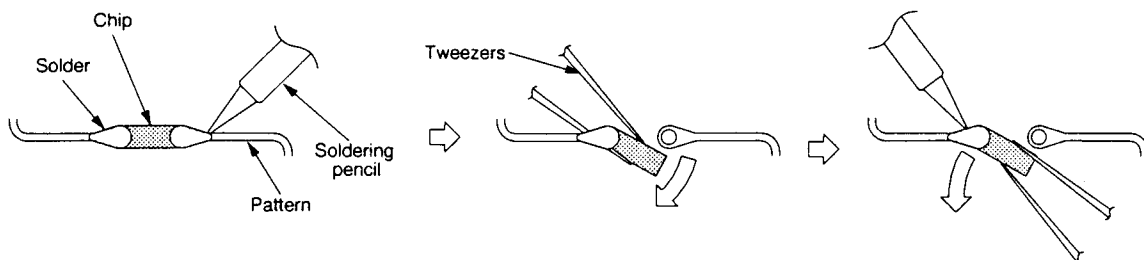
3 CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts (i.e. surface mount or SMD parts). When replacing these parts, note the following precautions:

- Use fine tipped, well insulated soldering iron of about 30 watts and tweezers.
- Melt the solder and remove the Chip Parts carefully so as not to tear off the copper foil from the printed circuit board.
- Discard removed chips, do not re-use them.
- Do not apply heat for more than 3 seconds to new Chip Parts.
- Avoid using a rubbing action when soldering.
- Take care not to scratch or damage the Chip Parts when soldering.
- Supplementary cementing is not required.

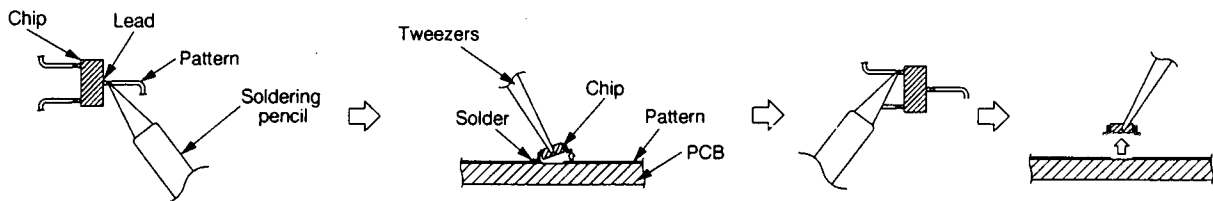
3.1 Removal of Chip Resistors, capacitors, etc.

1. Grasp the part with tweezers. Melt the solder at both sides alternately and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.



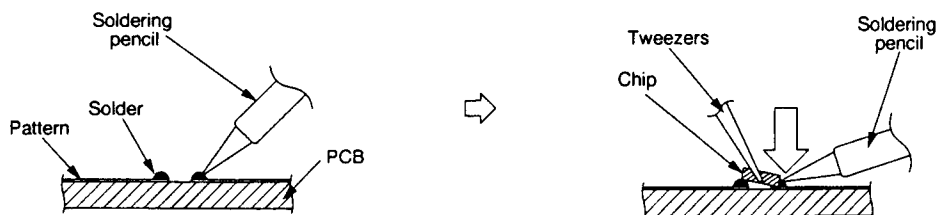
3.2 Removal of Chip Transistors

1. Melt the solder on one lead and lift that side upward.
2. Simultaneously melt the solder of the two remaining leads and lift the part from the PCB.



3.3 Replacement

1. Pre-solder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown in the figure.



4 VIDEOCRYPT DECODER

The VideoCrypt decoder PCB is only serviceable by Mitsubishi service department.

In the event of a fault on this PCB, please follow this procedure:

1. Contact the Mitsubishi consumer spares department to request an advance replacement VideoCrypt decoder PCB.
2. Upon receipt of the replacement PCB, complete the enclosed form and return it with the faulty PCB, in the packaging provided.

Failure to return the PCB within 30 days will incur full replacement PCB costs.

NOTE

The plastic PCB frame, connecting lead and fixing screw should be retained as the replacement PCB is supplied *without* these items.

User Guide

TV CONTROLS

MAINS ON/ OFF

Press to
switch the TV
on or off.

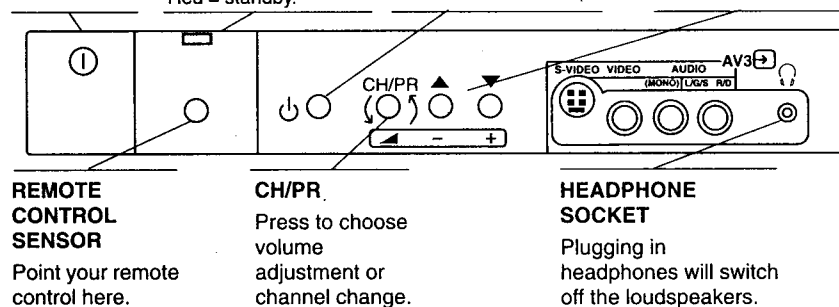
POWER ON/ STANDBY lamp

Green = TV on
Amber = Dubbing mode
(See page 26)
Red = standby.

STANDBY

Press to switch the TV
on from standby. Press
again to switch it back
to standby.

Press these buttons to
change channel up or
down by one number,
or to adjust the volume
up or down.



REMOTE CONTROL SENSOR

Point your remote
control here.

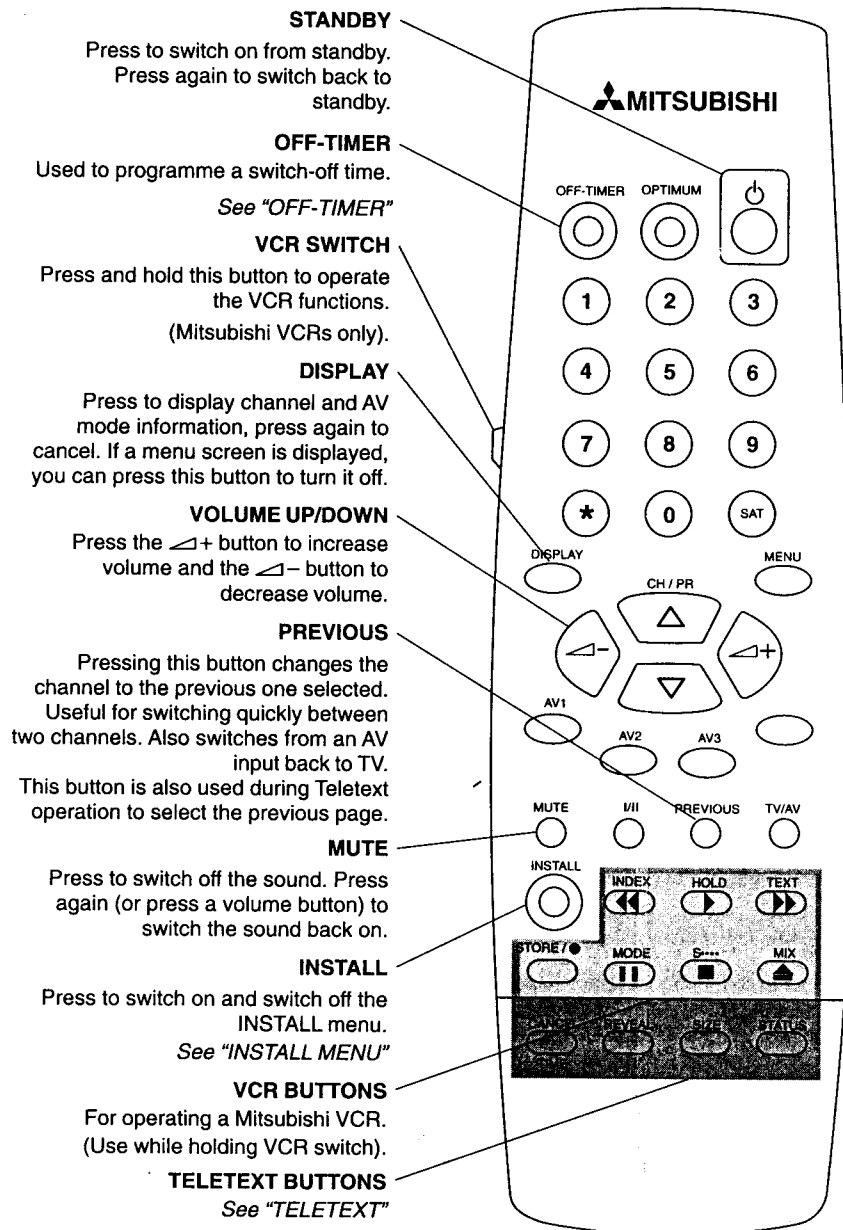
CH/PR

Press to choose
volume
adjustment or
channel change.

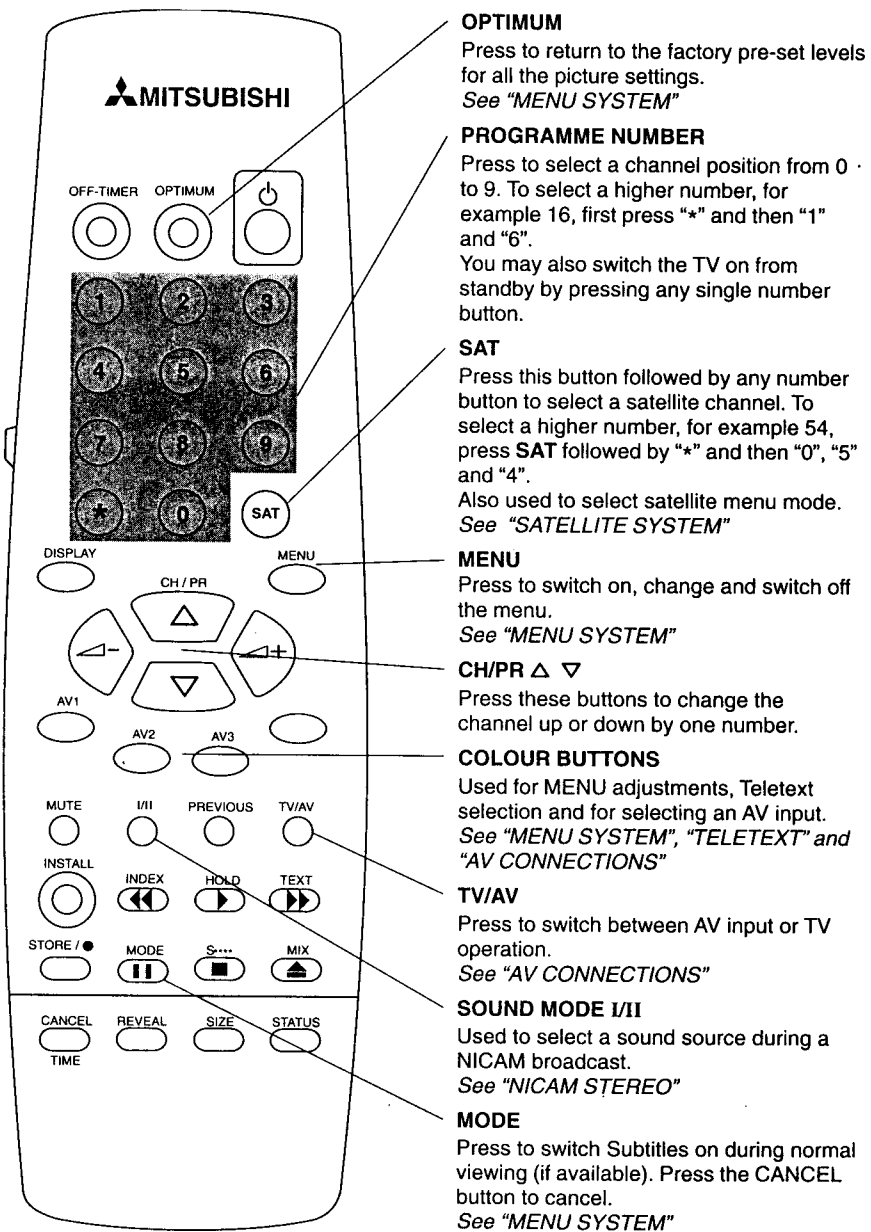
HEADPHONE SOCKET

Plugging in
headphones will switch
off the loudspeakers.

THE REMOTE CONTROL



THE REMOTE CONTROL



INSTALL MENU

Press the **INSTALL** button to display the **INSTALL MENU**.

You use the colour buttons **RED GREEN YELLOW** and **BLUE** to make selections from the **INSTALL MENU**.

DISPLAY LANGUAGE

Press the **RED** button to change the language—English, German, French or Dutch.

Press the **INSTALL** button to switch off the display.

CENTRE MODE

This control should be set to **NORMAL**. However, if you are *not* using the centre speaker with your TV you should set this control to **PHANTOM**. You are advised to connect and use the centre speaker, as the sound quality will be reduced without it.

Use the $\triangle$ + or $\triangle$ - buttons to change this setting.

See "DOLBY PRO LOGIC SURROUND" starting on page 27 for more details.

TUNING

This TV has 90 programme positions (0...89) that can be tuned to receive different channels. This TV is designed to receive broadcasts to the standard: PAL I, UHF channels A to C and cable channels S1 to S1 (VB1) and VHF channels D to J and cable channels S11 to S41 (VB2).

Note that BD and BDS models will only receive on the UHF band.

AUTOMATIC TUNING

1. Press the **INSTALL** button to display the **INSTALL MENU**.

2. Start the Auto-Tuning system by pressing the **GREEN** button *twice* (Press once to select **AUTO-TUNING**, press a second time to confirm), the Auto-Tuning display appears.

It will take a few minutes for the TV to find, name and store all the available stations. Auto-Tuning searches the lower VHF bands, VB1 and VB2, and then the UHF band.

(BD and BDS models search UHF band only).

When Auto-Tuning is complete, the Auto-Tuning display disappears and the TV switches to programme position 1 (BBC1 in the UK, RTE1 in Ireland).

NB You might find programme positions after position 5 filled with duplicated or weak stations. For details of moving or deleting these stations refer to "MOVING and DELETING A PROGRAMME POSITION" on page 18.

INSTALL MENU

ENGLISH
AUTO TUNING
SHUFFLE
MANUAL TUNING
CENTRE MODE NORMAL

AUTO TUNING SYSTEM

SEARCHING 01
FOUND STATION
CHECKING DATA

TUNING

MOVING and DELETING A PROGRAMME POSITION

1. Press the **INSTALL** button to display the **INSTALL MENU**.
2. Select **SHUFFLE** from the **INSTALL MENU** by pressing the **YELLOW** button.
3. Use $\triangle$ or ∇ to highlight in blue the position you wish to **MOVE** or **DELETE**.

TO MOVE THE SELECTED POSITION:

- a. Press the **YELLOW** button. The blue highlight now turns *red*.
- b. Use $\triangle$ or ∇ to highlight in blue the new position you wish to move to.
- c. Press the **YELLOW** button *twice* to move the programme position.* Programmes between the new and old positions will move up or down to fill the gap.

TO DELETE THE SELECTED PROGRAMME POSITION:

Press the **GREEN** button *twice* to delete this position.* Programmes after the deleted position will move up to fill the gap.

4. Press the **INSTALL** button to exit the **SHUFFLE MENU** and store the settings.

* The first press displays "O.K." at the bottom of the screen. If you change your mind and do not wish to move or delete this position—wait. The "O.K." will disappear after a few seconds.

PROGRAMME SKIP

This TV has a "skip" feature which allows you to pre-set a programme number so that you skip over it when you change channels using the $\triangle$ or ∇ buttons.

1. Press the **INSTALL** button to display the **INSTALL MENU**.

2. Select **SHUFFLE** from the **INSTALL MENU** by pressing the **YELLOW** button.

3. Use $\triangle$ or ∇ to highlight the position you wish to skip and press the **BLUE** button to switch from **SKIP OFF** to **SKIP ON**.

4. Repeat step 3 for other programme numbers as required.

5. Press the **INSTALL** button to exit the **SHUFFLE MENU** and store the settings.

SHUFFLE MENU

PR	NAME	SKIP	PR	NAME	SKIP
00	-----	OFF	05	-----	OFF
01	BBC1----	OFF	06	BBC1----	OFF
02	BBC2----	OFF	07	BBC2----	OFF
03	CH-4----	OFF	08	ITV----	OFF
04	-----	OFF	09	CH-4----	OFF

SHUFFLE MENU

PR	NAME	SKIP	PR	NAME	SKIP
00	-----	OFF	05	-----	OFF
01	BBC1----	OFF	06	BBC1----	OFF
02	BBC2----	OFF	07	BBC2----	OFF
03	CH-4----	OFF	08	ITV----	OFF
04	-----	OFF	09	CH-4----	OFF

SHUFFLE MENU

PR	NAME	SKIP	PR	NAME	SKIP
00	-----	OFF	05	-----	OFF
01	BBC1----	OFF	06	-----	OFF
02	BBC2----	OFF	07	BBC1----	OFF
03	ITV----	OFF	08	BBC2----	OFF
04	CH-4----	OFF	09	CH-4----	OFF

SHUFFLE MENU

PR	NAME	SKIP	PR	NAME	SKIP
00	-----	OFF	05	-----	ON
01	BBC1----	OFF	06	-----	OFF
02	BBC2----	OFF	07	BBC1----	OFF
03	ITV----	OFF	08	BBC2----	OFF
04	CH-4----	OFF	09	CH-4----	OFF

TUNING

CHANGING THE PROGRAMME NAME

1. Press the **INSTALL** button to display the **INSTALL MENU**.
2. Select **SHUFFLE** from the **INSTALL MENU** by pressing the **YELLOW** button.
3. Select the programme number you wish to name (or re-name) using Δ or ∇ .
4. Press the **RED** button to display a pointer under the name.
5. Press Δ or ∇ to change the letter (or number) above the pointer.
A blank space is shown as "-".
6. Press the **RED** button to move the pointer to the right and repeat 5.
7. Repeat steps 5 and 6 to complete the name.
8. Press the **INSTALL** button to exit the **SHUFFLE MENU** and store the settings.

SHUFFLE MENU					
PR	NAME	SKIP	PR	NAME	SKIP
00	V-----	OFF	05	-----	ON
01	■	OFF	06	-----	OFF
02	BBC2----	OFF	07	BBC1----	OFF
03	ITV-----	OFF	08	BBC2----	OFF
04	CH-4----	OFF	09	CH-4----	OFF

SHUFFLE MENU					
PR	NAME	SKIP	PR	NAME	SKIP
00	VCR-----	OFF	05	-----	ON
01	■	OFF	06	-----	OFF
02	BBC2----	OFF	07	BBC1----	OFF
03	ITV-----	OFF	08	BBC2----	OFF
04	CH-4----	OFF	09	CH-4----	OFF

MANUAL TUNING

To tune a station manually, for example, to tune in your VCR or a new station.

1. Press the **INSTALL** button to display the **INSTALL MENU**.
2. Select **MANUAL TUNING** by pressing the **BLUE** button.
3. Press Δ or ∇ to move the blue highlight to the channel guide.
4. Select a programme number using the number buttons. Press one number button for a single number or press "*" then 2 buttons for a 2 digit number.
5. Start tuning by pressing Δ or ∇ (for tuning up or down the band). The channel guide turns **RED** while searching then **WHITE** after a station is found.
*If the channel guide does not turn red, press Δ or ∇ to highlight **AFT** (Auto Fine Tuning) and switch it on by pressing Δ or ∇ .*

MANUAL TUNING MENU			
PROG		01	
CHANNEL			
AFT		ON	
NAME		-----	
SYSTEM		AUTO PAL	

FINE TUNING

Sometimes it may be necessary to fine tune a station manually, in the case of abnormal interference, for example.

- a. Press Δ or ∇ to highlight **AFT** and switch it off by pressing Δ or ∇ .
 - b. Press Δ or ∇ to highlight the channel guide and adjust the fine tuning using the Δ or ∇ buttons.
6. When you have finished your tuning adjustments, press the **STORE** button to store the new settings.
 7. Press the **INSTALL** button to exit the **MANUAL TUNING** menu.

MANUAL TUNING MENU			
PROG		01	
CHANNEL			
AFT		ON	
NAME		-----	
SYSTEM		AUTO PAL	

SATELLITE SYSTEM (BDS MODELS ONLY)

This TV can receive satellite broadcasts as well as normal television broadcasts. There are 150 satellite channels, many of them pre-tuned as shown in the separate satellite channel list. Some of these channels are scrambled, so if you wish to see them, you must pay a subscription to get a viewing card.

See "**VIEWING SCRAMBLED CHANNELS**" below.

BEFORE YOU START

Before you can use the satellite module of your Mitsubishi television you must have a satellite dish fitted and connected to your TV.

It is important that the dish is aimed in the exact direction of the satellite you wish to receive from and that you have all the necessary cables required to connect the dish to your television.

NB You must make sure that the LNB settings in the **SAT SET-UP MENU** are correct for the type of LNB attached to your dish.

See "**MAKING ADJUSTMENTS TO THE LNB SETTINGS**" on page 23.

SELECTING A SATELLITE CHANNEL

You can directly select a satellite channel by pressing the **SAT** button followed by the appropriate **NUMBER** button. To select a higher number, for example 54, press **SAT** followed by "*" and then the *three* numbers "0", "5" and "4".

You may wish to set up some satellite channels so that you can select them with the Δ or ∇ buttons or the number buttons (i.e., without using the **SAT** button).
See "**QUICK ACCESS TO SATELLITE CHANNELS**" on page 20 for details.

VIEWING SCRAMBLED CHANNELS

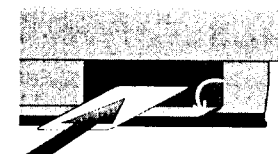
You will find that some channels are scrambled. To view these channels you will need a subscription card. From time to time, scrambled channels become visible and supply subscription information.

Your TV has a built-in internal decoder to descramble VideoCrypt programmes.

Open the door as shown to reveal the card slot.

Check your card is the right way round.

Always insert the card so that the metal pad faces downwards and is away from you. Make sure that you push the card all the way in.



Some channels operate a "PAY PER VIEW" system which requires a different kind of payment card. This is a system in which you only pay for certain "events" such as a football match, film premiere and so on.

See "**PAY PER VIEW CONTROL**" on page 23 for details.

NB Some methods of scrambling require an external decoder. You can attach an external decoder to the AV1 or AV2 SCART sockets found at the rear of the TV.
See "**AV CONNECTIONS**" on page 30 for details of the **SCART** connectors and "**USING AN EXTERNAL DECODER**" on page 24 for details of setting up the system.

QUICK ACCESS TO SATELLITE CHANNELS

You can copy satellite channels onto programme positions so that you can select them with the Δ or ∇ buttons or the number buttons (I.E., without using the **SAT** button). This is useful for channels you use frequently.

Any satellite channels you copy onto programme positions will *replace* the current programme position. Therefore, you should not copy satellite channels onto programme positions you want to keep.

1. Press the **INSTALL** button to display the **INSTALL MENU**.

2. Press the **YELLOW** button to display the **SHUFFLE MENU**.

SHUFFLE MENU			
PR	NAME	SKIP	PR NAME SKIP
00	-----	OFF	05 ----- OFF
01	BBC1----	OFF	06 ----- OFF
02	BBC2----	OFF	07 BBC1---- OFF
03	ITV-----	OFF	08 BBC2---- OFF
04	CH-4----	OFF	09 CH-4---- OFF

3. Use Δ or ∇ to highlight the position required for a satellite channel.

4. Press the **SAT** button. The **SAT PROGRAMME LISTINGS** display appears, showing a list of all the available satellite channels.

SAT PROGRAMME LISTINGS			
PR	NAME	LOCK	PR NAME LOCK
000	SKY-1--	--	005 VOX-----
001	SKY-NEWS	--	006 BRAVO----
002	UK-GOLD-	--	007 NICKELOD --
003	SKYSPORT	--	008 DISCOVERY --
004	EUROSPOR	--	009 CHILDREN --

5. Press Δ or ∇ to highlight the satellite channel you wish to copy.

6. Press the **YELLOW** button to copy this channel to the selected programme position. The **SHUFFLE MENU** reappears showing the satellite channel you have copied.

SHUFFLE MENU			
PR	NAME	SKIP	PR NAME SKIP
00	-----	OFF	05 ----- ON
01	BBC1----	OFF	06 SKYNEWS- OFF
02	BBC2----	OFF	07 BBC1---- OFF
03	ITV-----	OFF	08 BBC2---- OFF
04	CH-4----	OFF	09 CH-4---- OFF

7. Repeat steps 3-6 for other satellite channels you wish to copy onto programme positions.

8. Press the **INSTALL** button *twice* to return to normal TV mode.

NB Once you have copied a satellite channel onto a programme position you can delete or move the channel as with other programme positions.

See "MOVING and DELETING A PROGRAMME POSITION" on page 18 for details.

MANUALLY TUNING A SATELLITE CHANNEL

When tuning a satellite channel you should find out the frequency, LNB polarity, video settings and de-emphasis settings for that station. This can be found in any popular satellite television magazine.

1. Press the **SAT** button and key in any number button to select a satellite channel.
2. Press the **SAT** button followed by the **MENU** button. The **SAT SET-UP MENU** appears.
3. Press the **GREEN** button to display the **SAT MANUAL TUNING MENU**.

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	STEREO A
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	SKY-NEWS

4. Use Δ or ∇ to highlight **PROGRAM** and select the program number you wish to manually tune using Δ + or Δ -.
5. Use Δ or ∇ to highlight **LNB POLARITY** and switch to **H**, **V**, **V TONE** or **H TONE** as required using Δ + or Δ -.
6. Use Δ or ∇ to highlight **DE-EMPHASIS** and select **PANDA**, **NRS**, **50us**, **75us** or **J17** as required using Δ + or Δ -.
7. If necessary, use Δ or ∇ to highlight **DECODER** and switch to **NONE** using Δ + or Δ -.
8. Use Δ or ∇ to highlight **VIDEO SETTINGS** and switch to **NORMAL**, **PAL**, **MAC** or **BASEBAND** as required (The **RADIO** setting of this control allows for screen blanking while you listen to satellite radio stations).
See "SATELLITE RADIO AND FOREIGN LANGUAGES" on page 21 for more details.
9. Use Δ or ∇ to highlight **FREQUENCY**.
10. If you know the correct frequency for the desired channel you should key it in using the **NUMBER** buttons. Otherwise, hold Δ + or Δ - to tune up or down until you find the channel you want.

11. If necessary, use Δ or ∇ to highlight **DECODER** and switch to **INTERNAL** (for VideoCrypt scrambled channels, **EXTERNAL1** (decoder connected to AV1 SCART socket) or **EXTERNAL2** (decoder connected to AV2 SCART socket).
See "USING AN EXTERNAL DECODER" on page 24 for more details.
12. Press the **STORE** button to memorise the new settings. The display flashes red to confirm the action.
13. Repeat steps 4-12 for other satellite channels you wish to manually tune.
14. Press the **GREEN** button to exit the **SAT MANUAL TUNING MENU**.

NB Some satellite television channels also broadcast radio stations and extra sound channels with foreign languages. It is possible to change the audio frequency of your satellite tuner to listen to these radio stations or to change the language of a satellite channel.

You will find information about the different languages in any popular satellite television magazine.

See "SATELLITE RADIO AND FOREIGN LANGUAGES" on page 21 for more details.

SATELLITE SYSTEM (BDS MODELS ONLY)

SATELLITE RADIO AND FOREIGN LANGUAGES

Some satellite television channels also broadcast radio stations and extra sound channels with foreign languages. It is possible to change the audio frequency of your satellite tuner to listen to these radio stations or to change the language of a satellite channel.

You will find information about the different languages in any popular satellite TV magazine.

1. Press the **SAT** button, and key in the satellite channel number. To select a higher number, for example 54, press **SAT** followed by "" and then the *three* numbers "0", "5" and "4".
2. Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.
3. Press the **GREEN** button to display the SAT MANUAL TUNING menu.

SCREEN BLANKING—RADIO

- a. If necessary, use Δ or ∇ to highlight **DECODER** and switch to **NONE** using Δ or ∇ .
 - b. Use Δ or ∇ to highlight **VIDEO SETTINGS**.
 - c. Use Δ or ∇ to select **RADIO**. The screen will become blank. If you want to switch screen blanking off again, return **VIDEO SETTINGS** to the normal viewing position for the satellite channel.
4. Use Δ or ∇ to highlight **AUDIO SETTINGS**.
 5. Use Δ or ∇ to select **MONO**, **STEREO A**, **STEREO B** or **MANUAL** as required. You will notice the **LEFT** and **RIGHT** sound frequencies changing. Adjust the control until *both* frequencies are correct for the radio station or language variant you wish to hear.

MANUALLY TUNING A RADIO STATION

If a satellite channel has a lot of radio stations, it may be better to manually adjust the audio frequencies. In this case select **MANUAL** from the **AUDIO SETTINGS** control. Use Δ or ∇ to highlight **LEFT** or **RIGHT** and adjust the audio frequency using Δ or ∇ . You can also key in the frequency directly using the number buttons.

6. Press the **STORE** button to memorise the new settings.
7. Press the **GREEN** button to exit the menu system.

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	
DECODER	INTERNAL
AUDIO SETTINGS	STEREO A
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	SKY-NEWS

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	SKY-NEWS

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	SKY-NEWS

SATELLITE SYSTEM (BDS MODELS ONLY)

CHANGING A SATELLITE CHANNEL NAME

1. Press the **SAT** button, and key in the satellite channel number. To select a higher number, for example 54, press **SAT** followed by "" and then the *three* numbers "0", "5" and "4".
2. Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.
3. Press the **GREEN** button to display the SAT MANUAL TUNING MENU.
4. Use Δ or ∇ to highlight **NAME**. A pointer appears at the first letter or number in the channel name.
5. Use Δ or ∇ to change the letter or number above the pointer.
6. Use Δ or ∇ to move the pointer to the right.
7. Repeat steps 5-6 until the channel name is complete.
8. Press the **STORE** button to memorise the new settings. The display flashes red to confirm the action.
9. Press the **GREEN** button to exit the SAT MANUAL TUNING MENU and store the new settings.

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	MANUAL
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	MANUAL
	LEFT 7.02
	RIGHT 7.20
DE-EMPHASIS	NRS
NAME	NEWS

NB If you have copied a satellite channel onto a programme position for selection using the Δ , ∇ , or the number buttons, you can also change the channel name from the **SHUFFLE** menu. See "CHANGING THE PROGRAMME NAME" on page 19.

SATELLITE EVENT TIMER

If you have a VCR connected to the AV2 SCART socket, you can set an "event timer" so that you can record different satellite channels at varying times. The "event timer" can be set so that you can record satellite channels up to 28 days in advance.

You can also select a "**CURRENT**" event. This starts an event immediately and also locks the satellite channel so that it cannot be changed (accidentally) while the event is being recorded. It is also possible to set "regular events" so that you can record the same channel at the same time daily or weekly.

NB To use this feature you should have AV2 DUBBING switched **ON** and the AV2 OUTPUT set to **SAT**.

See "AV2 DUBBING" on page 26 for details.

Some Mitsubishi VCRs have a connector which allows them to automatically activate the satellite event timer via a link lead.

See "SATELLITE CONTROL" on page 24 for details.

1. Press the **SAT** button and select a satellite channel.

2. Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.

3. Press the **YELLOW** button to display the SAT EVENT TIMER MENU.

4. Use Δ or ∇ to highlight **EVENT**.

5. Use Δ or ∇ to select an event number, or **CURRENT** if you want to set an event to start now.

6. Use Δ or ∇ to highlight **PROGRAM** and select the satellite channel you want to set this event for using Δ or ∇ .

SAT EVENT TIMER

	TUE	09:30
EVENT	1	
PROGRAM	001	SKY-NEWS
DAY	2ND	THURSDAY
REGULAR EVENT	OFF	
START	20:05	
STOP	22:35	

SETTING REGULAR EVENTS:

- Use Δ or ∇ to highlight **REGULAR EVENT** and adjust to **DAILY** or **WEEKLY** using Δ or ∇ .
- Use Δ or ∇ to highlight **DAY** if necessary and select the day of the event using Δ or ∇ .

SETTING A SINGLE EVENT:

- Use Δ or ∇ to highlight **REGULAR EVENT** and adjust to **OFF** using Δ or ∇ .
- Use Δ or ∇ to highlight **DAY** and adjust to the day (up to 28 days ahead) that you want to set an event for (I.E., If today is a Monday tomorrow is "1st Tuesday" and next Monday is "1st Monday").
- Use Δ or ∇ to highlight **START** and key in the starting time of the event using the number buttons.
- Use Δ or ∇ to highlight **STOP** and key in the finishing time of the event using the number buttons.

NB If the starting time of an event occurs before the finishing time of a current event, the next event will start and interrupt the current one.
If you try to select a new channel while an event is in progress, the message "**EVENT ENABLED**" will appear on the screen. To cancel the event, select **CLEAR** from the SAT EVENT TIMER menu by pressing the **GREEN** button.

LOCKING SATELLITE CHANNELS

You can lock satellite channels so that they cannot be watched unless a 4 digit number is keyed in.

If you lock any satellite channels the satellite menus will also become locked. This is to prevent the re-tuning of a non-locked channel.

If you select a satellite channel which has been locked, you will be prompted for the PIN number. You will not be able to view the satellite channel unless you key in the correct PIN number.

The Personal Identification Number (PIN) is pre-set as "3030", but you can change this number if you want.

See "CHANGING THE PIN NUMBER" on page 23 for details.

LOCKING AND UNLOCKING A SATELLITE CHANNEL

- Press the **SAT** button and select a satellite channel.
- Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.
- Press the **BLUE** button to display the SAT PROGRAMME LISTINGS.
- Use Δ or ∇ to select the satellite channel you wish to lock or unlock.
- Press the **RED** button to **LOCK** or **UNLOCK** this channel.

SAT PROGRAMME LISTINGS					
PR	NAME	LOCK	PR	NAME	LOCK
000	SKY-1--	--	005	VOX-----	--
001	SKY-NEWS	--	006	BRAVO---	--
002	UK-GOLD-	--	007	NICKELOD	--
003	SKYSPORT	--	008	DISCOVRY	--
004	EUROSPOR	--	009	CHILDREN	--

ENTER PIN XXXX

An "XXXX" prompt will appear.

- Key in your PIN number now.

If you key in the wrong number, the "XXXX" prompt will reappear.

When you have keyed in the correct PIN number, the channel will **LOCK** or **UNLOCK**.

- Press the **BLUE** button to exit the SAT PROGRAMME LISTINGS and return to normal viewing.

SAT PROGRAMME LISTINGS					
PR	NAME	LOCK	PR	NAME	LOCK
000	SKY-1--	--	005	VOX-----	--
001	SKY-NEWS	ON	006	BRAVO---	--
002	UK-GOLD-	--	007	NICKELOD	--
003	SKYSPORT	--	008	DISCOVRY	--
004	EUROSPOR	--	009	CHILDREN	--

SATELLITE SYSTEM (BDS MODELS ONLY)

SAT SET-UP MENU

Press the **SAT** button and select a satellite channel.

Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.

Press the **MENU** button again to switch off the display.

CHANGING THE PIN NUMBER

1. Use Δ or ∇ to highlight **NEW PIN NUMBER**.

2. Key in the *current* PIN number. If you key in the wrong number, the "XXXX" prompt will reappear.

When you have keyed in the correct PIN number, an "O.K." will appear.

3. Key in the new PIN number. The "O.K." will disappear in a few seconds.

SAT SET-UP MENU				
LNB TYPE	1	FSS-A	9.750	GHz
	1T	FSS-B	10.000	GHz
AFC	ON			
LNB POWER	ON			
CLOCK SET:	DAY	FRIDAY		
	HRS:MINS	16:50		
NEW PIN NUMBER		XX--		
PAY PER VIEW		AUTHORISE		

SETTING THE CLOCK

1. Use Δ or ∇ to highlight **DAY**.

2. Use Δ or ∇ to select the correct day of the week.

3. Use Δ or ∇ to highlight **HRS:MINS**.

4. Key in the correct time using the **NUMBER** buttons.

SAT SET-UP MENU				
LNB TYPE	1	FSS-A	9.750	GHz
	1T	FSS-B	10.000	GHz
AFC	ON			
LNB POWER	ON			
CLOCK SET: DAY			FRIDAY	
	HRS:MINS		16:50	
NEW PIN NUMBER		XX--		
PAY PER VIEW		AUTHORISE		

PAY PER VIEW CONTROL

Use this control to authorise payment for a PAY PER VIEW event.

1. Use Δ or ∇ to highlight **PAY PER VIEW**.

2. Press and hold Δ or ∇ for a few seconds to authorise payment and unscramble the channel. An "O.K." appears and the display *briefly* flashes red to confirm the action.

SAT SET UP MENU				
LNB TYPE	1	FSS-A	9.750	GHz
	1T	FSS-B	10.000	GHz
AFC	ON			
LNB POWER	ON			
CLOCK SET:	DAY	FRIDAY		
	HRS:MINS	16:50		
NEW PIN NUMBER	XX--			
PAY PER VIEW	AUTHORISE			

SATELLITE SYSTEM (BDS MODELS ONLY)

MAKING ADJUSTMENTS TO THE LNB SETTINGS

It is possible to make adjustments to the LNB settings from the SAT SET-UP MENU.

Press the **SAT** button and select a satellite channel.

Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.

LNB TYPE

It is important, when fitting your satellite dish, that you know the frequency of your LNB's local oscillator. If this does not match the **LNB TYPE** settings, you may receive the wrong channel, or no channel at all.

These are the most common LNB types:

LNB TYPE	FREQUENCY RANGE	TYPICAL SATELLITES
9.750 FSS-A	10.700—11.800GHz	ASTRA 1A, 1B, 1C, 1D/ Intelsat / Eutelsat
10.000 FSS-B	10.920—12.050GHz	ASTRA 1, 1B, 1C / Intelsat / Eutelsat
11.475T-COM	12.425—13.525GHz	Telecom 2A, 2B, 1C

"**LNB TYPE**" shows the name of the LNB and the frequency (in GHz) of the LNB's local oscillator.

"**FREQUENCY RANGE**" shows the range over which you should tune during manual tuning of a satellite station. It is also possible to select **MANUAL**, which allows you to key in the LNB's local oscillator frequency (between 9 GHz and 12 GHz). This is used if your LNB is not one of the common types or if your LNB is slightly offset.

1. Use Δ or ∇ to highlight **LNB TYPE 1**.

2. Select the LNB type using Δ or ∇ .
If you select **MANUAL**, key in the frequency using the number buttons.

SAT SET-UP MENU				
LNB TYPE	1	FSS-A	9.750	GHz
	1T	FSS-B	10.000	GHz
AFC	ON			
LNB POWER	ON			
CLOCK SET:	DAY	FRIDAY		
	HRS:MINS	16:50		
NEW PIN NUMBER	XX--			
PAY PER VIEW	AUTHORISE			

IF YOU HAVE A DUAL BAND LNB

If you have a dual band "tone switching" LNB, two band settings can be made to cover the upper and lower frequencies.

a) Use Δ or ∇ to highlight **LNB TYPE 1T**.

b) Select the second LNB type using Δ or ∇ . If you select **MANUAL**, key in the frequency using the number buttons.

SAT SET-UP MENU				
LNB TYPE	1	FSS-A	9.750	GHz
	1T	FSS-B	10.000	GHz
AFC	ON			
LNB POWER	ON			
CLOCK SET: DAY	FRIDAY			
	HRS:MINS	16:50		
NEW PIN NUMBER	XX--			
PAY PER VIEW	AUTHORISE			

SATELLITE SYSTEM (BDS MODELS ONLY)

MAKING ADJUSTMENTS TO THE LNB SETTINGS (continued).

LNB POWER

Your television should provide power to the LNB *unless* the LNB is on a communal antenna. The normal setting for this control is **ON**.

If your LNB is on a communal antenna, it may be that it should not receive power from your television. If this is the case you should set this control to **OFF**.

1. Use Δ or ∇ to highlight **LNB POWER**.

SAT SET-UP MENU			
LNB TYPE	1	FSS-A	9.750 GHz
	1T	FSS-B	10.000 GHz

2. Adjust to **ON** or **OFF** using Δ + or Δ -.

AFC	ON
LNB POWER	ON
CLOCK SET: DAY	FRIDAY
HRS:MINS	16:50
NEW PIN NUMBER	XX--
PAY PER VIEW	AUTHORISE

AFC

Your receiver has been pre-set for Automatic Frequency Control (AFC). You should not need to change this unless you are trying to receive a very weak signal with a speckled picture. In this case, you can switch AFC off and adjust the LNB TYPE frequency slightly using the **MANUAL** setting of the **LNB TYPE** control.

See "LNB TYPE" on page 17 for details.

1. Use Δ or ∇ to highlight **AFC**.

SAT SET-UP MENU			
LNB TYPE	1	FSS-A	9.750 GHz
	1T	FSS-B	10.000 GHz

2. Switch **ON** or **OFF** using Δ + or Δ -.

AFC	OFF
LNB POWER	ON
CLOCK SET: DAY	FRIDAY
HRS:MINS	16:50
NEW PIN NUMBER	XX--
PAY PER VIEW	AUTHORISE

NB Adjustments to the AFC affect *all* the channels and you should therefore return the setting to its usual position when you are finished watching the weaker station.

SATELLITE SYSTEM (BDS MODELS ONLY)

USING AN EXTERNAL DECODER

It is possible to connect one or two external decoders to the AV1 and AV2 SCART sockets at the back of your TV.

See "AV CONNECTIONS" on page 30 for details of connecting equipment to the AV1 and AV2 SCART sockets.

NB Your TV has a built-in decoder to descramble VideoCrypt programmes.

1. Press the **SAT** button and key in the satellite channel number. To select a higher number, for example 54, press **SAT** followed by "" and then the *three* numbers "0", "5" and "4".
2. Press the **SAT** button followed by the **MENU** button to display the SAT SET-UP MENU.
3. Press the **GREEN** button to display the SAT MANUAL TUNING MENU.
4. Use Δ or ∇ to highlight **DECODER**.
5. Use Δ + or Δ - to select **NONE**, **EXTERNAL1** (decoder connected to AV1 SCART socket), **EXTERNAL2** (decoder connected to AV2 SCART socket) or **INTERNAL**.
6. Press the **STORE** button to memorise the new settings.
7. Press the **GREEN** button to exit the menu system.

SAT MANUAL TUNING	
PROGRAM	001
FREQUENCY	11.698GHZ
LNB POLARITY	H TONE
VIDEO SETTINGS	PAL
DECODER	INTERNAL
AUDIO SETTINGS	STEREO A
	LEFT 7.02
	RIGHT 7.20
	NRS
DE-EMPHASIS	SKY-NEWS
NAME	

SATELLITE CONTROL

Some Mitsubishi VCRs have a feature which allows them to change satellite channels automatically for recording different channels at different times. If your VCR has this feature, you will need to key the BRAND CODE "01" into your VCR to set the correct satellite type.

If your VCR has this control it will be able to activate the "event timer" of your TV automatically when recording a satellite channel.

See your VCR instructions for details of using this feature.

You will need a link lead to connect your VCR to your TV. This lead is available from your dealer and you should ask for "SATELLITE LEAD" part number 999D161010.

MENU SYSTEM

Press the **MENU** button to display a menu screen. If necessary, press again to display **MAIN MENU**. To select a sub-menu, press a colour button.

MAIN MENU

AV-MEMORY M1 M2 AV SAT

MAIN MENU

MEMORY M1 M2 AV SAT

Select an AV-MEMORY by pressing Δ + or ∇ -.

PICTURE SOUND SPECIAL SET-UP

There are 4 memory positions, M1, M2, AV and SAT which will store any changes you make to the sound or picture adjustments. This allows you to have 4 different sets of adjustments for different types of programmes.

PICTURE MENU

Press the **MENU** button to display a menu screen.

If the **PICTURE MENU** is *not* displayed, press the **RED** button.

In the **PICTURE** menu, you use the four buttons Δ , ∇ , Δ + and ∇ - to select and adjust the controls.

MEMORY

You can select an AV-MEMORY by pressing

Δ + or ∇ -.

COLOUR

Adjust the strength of the colours. Use skin colours to judge the best setting.

CONTRAST

The contrast should be adjusted to suit the light level of your surroundings.

BRIGHTNESS

Adjust the brightness so that the black parts of the picture are only just black.

SHARPNESS

Adjust the sharpness to change how sharp the picture looks.

TEMPERATURE

Adjust the colour temperature to a slightly warmer (red) or cooler (blue) tone.

TINT

This function is only available when watching an NTSC programme through an AV input. See "AV CONNECTIONS" on page 30 for further details.

Adjust the tint of the picture using skin colours to judge the best setting.

OPTIMUM

With the blue highlight on **MEMORY**, pressing the **OPTIMUM** button returns *all* the picture settings to the factory pre-set levels for the current AV Memory.

With the blue highlight on any picture control, pressing the **OPTIMUM** button returns only that control to the factory pre-set level.

PICTURE MENU				
MEMORY	M1	M2	AV	SAT
COLOUR				
CONTRAST				
BRIGHTNESS				
SHARPNESS				
TEMPERATURE				
TINT				

MENU SYSTEM

SOUND MENU

Press the **MENU** button to display a menu screen.

If the **SOUND MENU** is *not* displayed, press the **GREEN** button.

In the **SOUND** menu, you use the four buttons Δ , ∇ , Δ + and ∇ - to select and adjust the controls.

MEMORY

You can select an AV-MEMORY by pressing Δ + or ∇ -. There are 4 memory positions, M1, M2, AV and SAT which will store any changes you make to the sound adjustments.

BASS

Adjusts the level of the low-frequency sounds.

TREBLE

Adjusts the level of the high-frequency sounds.

LOUDNESS

Switch on or off using Δ + or ∇ - to boost the bass level.

HYPER SOUND

Switch on or off using Δ + or ∇ - to boost the very low frequency sounds.

*Note that **LOUDNESS** and **HYPER SOUND** cannot both be switched on at the same time.*

SURROUND

"SURROUND" is a system to create a surrounding stereophonic sound. There is a choice of 8 sound effects:

SOUND MENU	
MEMORY	M1 M2 AV SAT
BASS	
TREBLE	
BALANCE	
LOUDNESS	ON
HYPER SOUND	OFF
SURROUND	PRO LOGIC
SURROUND LEVEL	
CENTRE LEVEL	
SURROUND DELAY	20mS
SPEAKER TEST	OFF

PRO LOGIC	Use when receiving stereo sound from a Dolby Surround encoded source. See "DOLBY PRO LOGIC SURROUND" on page 27 for details.
DISCO	Suited to small venue music, including jazz, cabaret and classical chamber music.
THEATRE	Suited to opera, rock and easy listening music.
CONCERT HALL	Suited to orchestral classical music and light orchestral music.
CATHEDRAL	Suited to organ music and New Age.
STADIUM	Suited to stadium rock and sporting events.
OFF	For normal mono or stereo sound.
PSEUDO STEREO	Creates the effect of stereo sound from a mono source.

OPTIMUM

With the blue highlight on **MEMORY**, pressing the **OPTIMUM** button returns *all* the sound setting except **LOUDNESS** and **HYPER SOUND** to the factory pre-set levels for the current AV Memory.

With the blue highlight on any sound control, pressing the **OPTIMUM** button returns only that control to the factory pre-set level.

MENU SYSTEM

SPECIAL MENU

Press the **MENU** button to display a menu screen.

If the SPECIAL MENU is *not* displayed, press the **YELLOW** button.

AUTO SUBTITLE

This TV has a feature which allows you to set Teletext subtitles (when available) to appear all the time, never, or only when the TV volume is muted. You can set Auto Subtitles following the procedure below.

1. Highlight **AUTO SUBTITLE** using Δ or ∇ , if necessary.

SPECIAL MENU	
AUTO SUBTITLE	OFF
FORMAT	AUTO
STANDARD M1	OFF
PICTURE SOUND EXIT SET-UP	

2. Use Δ + or Δ - to select **ON**, **OFF** or **MUTE**.

OFF = No automatic subtitles,

MUTE = Automatic subtitles when volume is muted,

ON = Subtitles appear all the time they are available.

SPECIAL MENU	
AUTO SUBTITLE	MUTE
FORMAT	AUTO
STANDARD M1	OFF
PICTURE SOUND EXIT SET-UP	

3. Exit the menu system by pressing the **YELLOW** button.

STANDARD M1

When this is switched **ON** picture adjustments will return to factory pre-set levels when you switch off the TV. When switched **OFF** any adjustments made to the picture settings will be remembered even when the TV is switched off.

1. Highlight **STANDARD M1** using Δ or ∇ .

SPECIAL MENU	
AUTO SUBTITLE	MUTE
FORMAT	AUTO

2. Switch **OFF** or **ON** using Δ + or Δ -.

STANDARD M1	ON
PICTURE SOUND EXIT SET-UP	

FORMAT

This switches the picture size for the correct display of normal (4x3) pictures or wide screen (16x9) pictures. If you are watching a 16x9 video in a suitable VCR the picture has to be squashed to return it to the correct "letter-box" shape otherwise objects on the screen will look too tall and thin.

The usual setting is **4x3**, but you can manually select **AUTO** or **16x9** if you like. (Automatic only works with the AV input).

1. Highlight **FORMAT** using Δ or ∇ .

SPECIAL MENU	
AUTO SUBTITLE	MUTE
FORMAT	AUTO

2. Switch to **AUTO**, **4x3** or **16x9** using Δ + or Δ -.

STANDARD M1	ON
PICTURE SOUND EXIT SET-UP	

MENU SYSTEM

SET-UP MENU

Press the **MENU** button to display a menu screen. If the SET-UP menu is not displayed, press the **BLUE** button.

AV2 DUBBING

The TV can route signals from AV1, AV3 or the internal satellite system while in standby. This allows overnight video recording of satellite programmes (for example) without having to leave the TV fully switched on.

Note that before you can route satellite signals to AV2 you *must* program the SAT EVENT TIMER. This provides power to the satellite module during standby mode.

See "SAT EVENT TIMER" on page 22 for details.

This control will not work if an external decoder has been connected to the AV2 SCART socket.

See "USING AN EXTERNAL DECODER" on page 24 for details.

NB When AV2 DUBBING is switched **ON** the Power-on / Standby lamp will turn amber when the TV is in standby mode.

1. Highlight "**AV2 DUBBING**" with the Δ or ∇ buttons.
2. Select **ON** or **OFF** with the Δ + or Δ - buttons.

SET-UP MENU	
SYSTEM	SECAM
AV2 OUTPUT	AV1
AV2 DUBBING	OFF

See "AV CONNECTIONS" on page 30 for details of connecting a VCR or etc to your Television via the AV sockets.

AV2 OUTPUT

The output of the AV2 connector can be selected to be the same as the TV signal (the current TV channel), the current satellite channel, or the AV1 or AV3 input signal.

This control is not available if an external decoder has been connected to the AV2 SCART socket.

See "EXTERNAL DECODER" on page 24 for details.

1. Highlight "**AV2 OUTPUT**" with the Δ or ∇ buttons.
2. Select **TV**, **AV1**, **SAT**, or **AV3** with the Δ + or Δ - buttons.

SET-UP MENU	
SYSTEM	SECAM
AV2 OUTPUT	AV1
AV2 DUBBING	OFF

NB The AV2 output is always a standard video signal even when you have an S-video source, such as an S-VHS video recorder, connected to AV3.

SYSTEM

"**AUTO**" is the normal setting. However, in some cases you may want to select the colour system manually. This may be useful if you are receiving a weak station or when using some types of VCR with your TV.

1. Highlight **SYSTEM** using Δ or ∇ .
2. Switch to **AUTO**, **PAL**, **60PAL**, **SECAM**, **NTSC 358** or **NTSC 443** with the Δ + or Δ - buttons.

SET-UP MENU	
SYSTEM	SECAM
AV2 OUTPUT	AV1
AV2 DUBBING	OFF

NB Note that the NTSC colour system only functions in AV mode.

NICAM STEREO

To check for a Nicam broadcast, press the **I/II** button. The sound mode will also be displayed when you change channel or the Nicam broadcast mode changes.

The on-screen display will show how Nicam is being broadcast for the current channel:

NICAM STEREO	= Nicam stereo
NICAM II	= Nicam dual-sound (bilingual)
NICAM I	= Nicam mono
NICAM OFF	= Nicam available but switched off
NO DISPLAY	= Nicam not being received

If Nicam is being received, you can switch between the available Nicam mode and Nicam off by pressing the **I/II** button.

NB Broadcasters will usually transmit mono programmes in stereo mode, i.e. the sound is actually mono but the on-screen display shows "NICAM STEREO".

DUAL SOUND (BILINGUAL) RECEPTION

During a dual-sound (bilingual) broadcast pressing the **I/II** button repeatedly selects the following options:

channel I on both speakers	NICAM
channel II on both speakers	NICAM
channel I on left speaker, II on right speaker	NICAM
Nicam off	NICAM OFF

DOLBY PRO LOGIC SURROUND

Dolby Surround Pro Logic gives realistic sound that literally surrounds you. It is effective when viewing programmes that are made with Dolby Surround soundtracks. Prerecorded video tapes and laser disks can be easily identified by the DOLBY SURROUND printing on the package. TV programmes also show this type of indication in their credits.

In Dolby Surround Pro Logic, in addition to the TV's left and right internal speakers, there are external rear "Surround" speakers and a centre speaker. These speakers give the sound a three dimensional quality.

Manufactured under licence from Dolby Laboratories Licensing Corporation. DOLBY the double-D symbol and PRO LOGIC are trademarks of Dolby Laboratories Licensing Corporation.

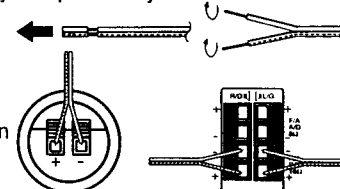
1. CONNECT THE SURROUND AND CENTRE SPEAKERS

Before you connect your speakers, you should assemble the TV stand following the instructions supplied with the stand. You should also set the CENTRE MODE in the INSTALL MENU to **NORMAL**.

See "CENTRE MODE" on page 18 for details.

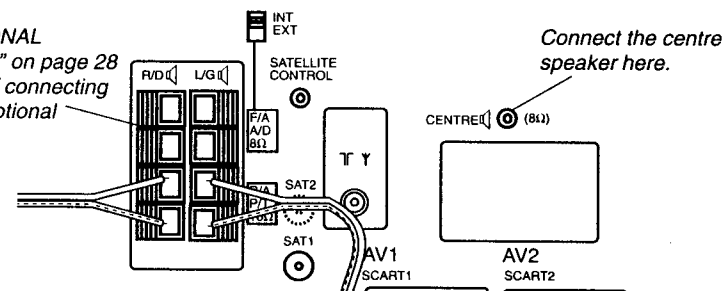
If you do not want to use the stand or connect the centre speaker to your TV you should set this control to **PHANTOM**. However, it is recommended that you connect the centre speaker as this is an important part of your speaker layout.

1. Prepare the speaker leads by removing the insulation on both ends, separating the wires and twisting the cores as shown.
2. On the back of the speakers you will find one red and one black connector. Push the tabs on the connectors and insert the speaker leads*.



3. On the back of the TV you will find 4 red and black connectors as shown. Push the tabs on the connectors and insert the surround speaker leads making sure that you use the connectors marked "R / A / P / T 16 Ω". Make sure that the '+' and '-' terminals on the TV are connected to the '+' and '-' terminals on the speakers by following the marking on the wire.
4. Insert the centre speaker pin connector into the socket marked **CENTRE**.

See "OPTIONAL SPEAKERS" on page 28 for details of connecting and using optional speakers.

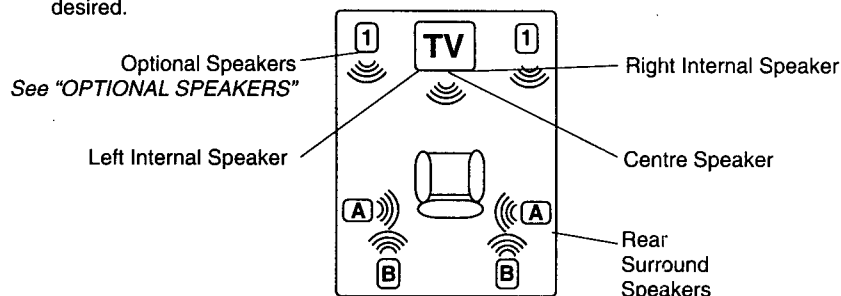


DOLBY PRO LOGIC SURROUND

2. SET UP THE LISTENING AREA

The rear surround speakers should be placed either facing forwards (B) or preferably inwards (A). It is best if they are a little above the level of your head.

The speakers have keyhole slots on the back so you can fix them to the wall if desired.



Position the speakers and decide on your optimum viewing position.

3. SWITCH ON THE TEST SIGNAL

Your TV produces a test signal which is used for balancing the volume level from the speakers.

1. Press the **MENU** button to display a menu screen.
2. If the **SOUND** menu is not displayed, press the **GREEN** button to display the **SOUND** menu.
3. Use Δ or ∇ to select **SURROUND** and switch to **PRO LOGIC** using Δ or ∇ .

SOUND MENU				
MEMORY	M1	M2	AV	SAT
BASS				
TREBLE				
BALANCE				
LOUDNESS	ON			
HYPER SOUND	OFF			
SURROUND	PRO LOGIC			
SURROUND LEVEL				
CENTRE LEVEL				
SURROUND DELAY	20mS			
SPEAKER TEST	OFF			

4. Use Δ or ∇ to select **SPEAKER TEST** and switch **ON** using Δ or ∇ . A "pink noise" test signal will sound for two seconds on each speaker channel in turn. The sequence for the test signal is:

LEFT... CENTRE... RIGHT... REAR...

To hold the test signal on any sound channel, press the **HOLD** button. Press the **HOLD** button again to continue with the sequence.

DOLBY PRO LOGIC SURROUND

4. ADJUST THE SOUND CHANNELS

Adjust the sound channels so that the volume of each channel sounds the same when heard from your normal viewing position.

LEFT and RIGHT CHANNEL ADJUSTMENT

To adjust the left and right sound channels, use Δ or ∇ to select **BALANCE** and adjust using Δ or ∇ .

CENTRE CHANNEL ADJUSTMENT

To adjust the **CENTRE SPEAKER** sound channel, use Δ or ∇ to select **CENTRE LEVEL** and adjust using Δ or ∇ .

REAR CHANNEL ADJUSTMENT

To adjust the **REAR SURROUND** sound channel, use Δ or ∇ to select **SURROUND LEVEL** and adjust using Δ or ∇ .

5. ADJUST THE SURROUND DELAY

You can adjust the surround delay for different sizes of rooms, or for different layouts of your speakers. The surround delay is pre-set to 20mS but you can increase or decrease this as desired.

1. Press the **MENU** button to display a menu screen.

2. If the **SOUND** menu is not displayed, press the **GREEN** button.

3. Use Δ or ∇ to highlight **SURROUND** and select **PRO LOGIC** using Δ or ∇ .

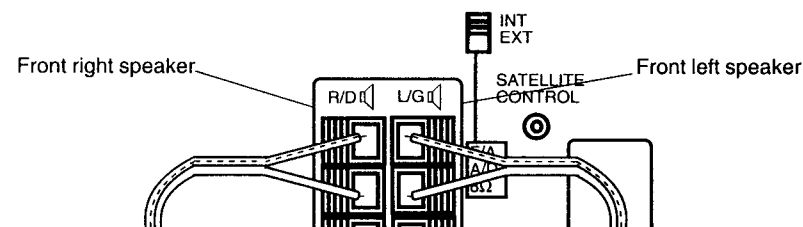
4. Use Δ or ∇ to highlight **SURROUND DELAY** and adjust using Δ or ∇ .

5. Press the **MENU** button to exit the **SOUND** menu.

SOUND MENU				
MEMORY	M1	M2	AV	SAT
BASS				
TREBLE				
BALANCE				
LOUDNESS	ON			
HYPER SOUND	OFF			
SURROUND	PRO LOGIC			
SURROUND LEVEL				
CENTRE LEVEL				
SURROUND DELAY	20mS			
SPEAKER TEST	OFF			

OPTIONAL SPEAKERS

Normally, the speakers in the TV carry the left and right sound channels. However, it is possible to connect a pair of external speakers to your TV to carry these channels. A switch at the back of your TV switches between internal (INT) or external speakers (EXT). These should be 8 ohm speakers rated at 10w R.M.S or greater.



TELETEXT

BASIC OPERATION

With the TV switched on, press the **TEXT** button to turn Teletext on, an index page is displayed. The top line will look something like this:

P100 CEEFAX 100 Fri 15 Mar 12:54 19

Choose a subject and input the page number of the subject by pressing the number buttons on the remote control unit. As you press the buttons the numbers will appear at the top left hand corner of the TV screen.

To see an index page simply press the **INDEX** button.

At the bottom of the page there are 4 coloured page titles (usually these are subject areas) to see one of these—press the matching **COLOUR** button.

To superimpose the Teletext page on the TV picture (MIX mode), press the **MIX** button.

To stop using Teletext and return to watching TV—press the **TV/AV** button.

OTHER FUNCTIONS

△ ▽

These buttons can be used to select the next page number up or down—but note that the next page number may not exist.

SIZE

Pressing the **SIZE** button repeatedly enlarges the top half of the page, then the bottom half and then returns the page to normal.

HOLD

Some Teletext pages contain several "sub-pages" which are displayed one after another. If you want to stop the sub-pages changing—press the **HOLD** button. The symbol  will appear at the top left of the page. To cancel this function press the **HOLD** button again or select another page.

REVEAL (REVL)

Pressing the **REVL** button will display hidden text, for example, on a quiz page with concealed answers. Press the button again to hide the text.

CANCEL CANCEL/TIME

Pressing the **CANCEL/TIME** button restores the television picture but leaves the Teletext system switched on. You can choose new pages without interrupting a television programme. Press again to restore Teletext.

The page number will be displayed when a page is received for the first time, or when a page is updated.

TIME CANCEL/TIME

Press the **CANCEL/TIME** button to see a digital clock on the screen when Teletext is switched off. The clock will disappear after a few seconds. Teletext must be available for this to work.

ADVANCED TEXT OPERATION (LIST MODE)

The Teletext system in this TV has an Advanced Text feature which allows you to memorise a list of 4 page numbers which can be different for each of the first 30 programme positions, I.E. programmes 0~29. Programme numbers higher than this share the list for programme 29.

1. Press the **MODE** button to select teletext "list" mode. The letter "L" and four coloured page numbers will appear at the bottom of the screen, E.g.:

L	100	888	255	255
	red	green	yellow	blue

2. To see one of these pages—press the matching **COLOUR** button.
3. To change the numbers to your own preferred pages:
 - a. Press a colour button.
 - b. Enter a page number (press 3 number buttons, for example).
 - c. Repeat this with the other colour buttons and with other page numbers if you like.
 - d. Store these new page numbers so that they are automatically displayed each time list mode is selected. Press the **STORE** button and hold it until the coloured numbers turn white. If the new page numbers are not stored then the old page numbers will return next time you select list mode.
4. To turn off list mode press the **MODE** button again.

OFF TIMER

The off-timer can be programmed to automatically switch the television to standby after a period of up to 90 minutes.

SETTING THE TIMER

1. Press the **OFF-TIMER** button, the screen shows:  00.
2. Press the button again to make the display count down in ten minute steps until you see the time you want.
3. Wait until the display disappears. The timer is now set.

TO CANCEL THE TIMER

Press the **OFF-TIMER** button then press again until the display shows zero. Alternatively, press the standby button twice.

TO CHECK THE REMAINING TIME

When the display is not on the screen, press the button once.

NB For the last 10 minutes the display will appear *briefly* in RED every minute. For the last minute the display is continuous until the TV switches off.

AV CONNECTIONS

AERIAL

The aerial socket at the back of the TV is a standard 75 ohm coaxial aerial socket. Connect your aerial in the usual way.

SATELLITE LNB

Connect your satellite dish to this socket.

EXTERNAL SPEAKERS

See "DOLBY PRO LOGIC SURROUND" starting on page 27 for details of connecting external speakers to your TV.

AV1 SCART SOCKET

Inputs: Audio, normal (composite) video and RGB.
Normally an RGB source will switch the TV to RGB input automatically. If not, you can select "(RGB)AV1" with the **RED** button.

Outputs: Audio and normal video. The output is always the same as the signal received through the aerial socket (the "TV signal") even when you are watching an AV input.

AV2 SCART SOCKET

Inputs: Audio and normal (composite) video.

Outputs: Audio and normal video. This output can be switched to provide either the TV signal, satellite signal, or the AV1 or AV3 input signal.

NB The output is normal video only, an S-video input is converted to normal video and an RGB signal cannot be output at all.).

See "AV2 OUTPUT" on page 26 for details of how to set the output.

AV3 INPUT

This input is behind the door on the front of your TV. There are four sockets: 1) an S-video socket for connecting a super-VHS VCR or similar; 2) two audio inputs—stereo left and right; and 3) a standard (or "composite") video socket (RCA phono type) for a conventional VCR.

NOTE: if you try to connect both the S-video socket and the standard socket at the same time, the TV will use the signal from the S-video input in preference to the standard input.

Note that if the audio output of your external video equipment is mono, make sure that you connect the audio plug to the "(MONO)" socket so that the signal is automatically sent to both the left and right TV speakers.

AV CONNECTIONS

SATELLITE CONTROL

Some Mitsubishi VCRs have a feature which allows them to change satellite channels automatically for recording different channels at different times. If your VCR has this feature, you will need to key the BRAND CODE "01" into your VCR to set the correct satellite type.

If your VCR has this control, it will be able to activate the "event timer" of your TV automatically when recording a satellite channel.

See your VCR instructions for details of using this feature.

You will need a link lead to connect your VCR to your TV. This lead is available from your dealer and you should ask for "SATELLITE LEAD" part number 999D159010.

STANDBY DUBBING

The TV can route signals from AV1, AV3 or the internal satellite system to AV2 while in standby. This allows overnight video recording of satellite programmes (for example) without having to leave the TV switched on.

See "SET-UP MENU" on page 26 for details of setting up and using this feature.

CHOOSING AN AV INPUT

You can select an AV input by pressing the **TV/AV** button on the remote control, or by pressing the **RED**, **GREEN** or **YELLOW** button. The on-screen display shows what you have selected: **AV1**, **AV2** or **AV3**.

1. Press the **RED** button to select **AV1**, the **GREEN** button to select **AV2** or the **YELLOW** button to select **AV3**.
2. Press the same colour button again to change the input as shown:

RED BUTTON:	AV1	↔	RGB-AV1
GREEN BUTTON:	AV2	↔	S-AV2
YELLOW BUTTON:	AV3 (does not change)		

If you have connected S-Video equipment to the AV3 input the on-screen display will show "S-AV3" instead of "AV3".

Pressing any **NUMBER** button will directly select TV mode from AV mode.

FORCED TV MODE

If you have connected equipment to the AV1 or AV2 SCART socket with a SCART to SCART connecting lead, you can usually expect the equipment to force the TV into AV mode automatically as soon as the equipment is set to play. In this case the on-screen display shows "**AV1**" or "**AV2**" in **red**.

To select a TV channel while the TV is forced into AV mode press the **TV/AV** button, the **PREVIOUS** button or any **NUMBER** button to select "forced TV"—shown by the channel display turning **blue**.

Press the **TV/AV** button to return to AV mode.